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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,479

08/14/2006

William Veronesi

60469-092PUS1;PA-000.0519

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EXAMINER

WEST, JEFFREY R

ART UNIT

PAPER NUMBER

2857

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,479

Applicant(s)

VERONESI ET AL.

Examiner

Jeffrey R. West

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/14/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "304" (page 7, line 3).

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-15, 17-19 and 21-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1, 17, and 21 are rejected as lacking enablement because they require that "sheave contact" and "load information" are determined using a "determined rate of degradation", a "modeled configuration" and an "estimated traffic pattern". The disclosure, however, indicates that the determined rate of degradation, modeled configuration, and estimated traffic pattern are all factors that affect a mean degradation map, but does not sufficiently enable one having ordinary skill in the art as how to determine the "sheave contact" and "load information" using each of these values.

For example, the specification indicates:

To obtain the strength loss model 102, the rate of degradation of the tensile support for a given constant load is obtained empirically. In one embodiment,

repeated bend cycles are applied to a plurality of sample tensile supports until they break. This can be conducted using any known fatigue machine. From this information, it is possible to determine a statistical distribution of the number of bend cycles required to bend a given tensile support to failure for a known constant load (page 3, lines 16-21).

This section indicates that the rate of degradation for a constant load is used to determine a "statistical distribution of the number of bend cycles required to bend a given tensile support to failure for a known constant load" but does not describe how the rate of degradation is used to determine a "sheave contact" or "load information".

The specification then indicates:

The remaining strength in the tensile support is also dictated by the elevator configuration 104, such as the number of sheaves in the elevator system, tensile support routing around the sheaves, the distance between the sheaves, and the sheave configuration. The estimated elevator traffic 106, such as frequency of use, average passenger weight, etc., is also considered in generating the mean degradation map. Usage details, such as the number of times the elevator moves between certain floors, directly affects the location and amount of degradation in the tensile support. Taking estimated elevator traffic 106 and the elevator configuration 104 into account keeps track of the number of times a sheave contacts a particular section of the tensile support and the tension at that time. This is tracked via a sheave contact and load tracking algorithm 108. From this information, it is possible to predict a wear state of a given section of the tensile support and therefore predict the remaining strength of the entire tensile support (page 3, lines 22-33).

This section indicates that the configuration of the elevator system is used to determine "sheave contact" by describing how the number and location of sheaves will affect the contact between the sheaves and the tensile support, but does not indicate how the configuration is used to determine "load information". Similarly, it is

also described how the estimated elevator traffic is used to determine "sheave contact" by describing how the movement of the elevator dictates as to which sheaves are contacted, but does not indicate how an elevator traffic pattern is used to determine "load information".

Claims 2-15, 18, 19, and 22-24 are rejected under 35 U.S.C. 112, first paragraph, because they incorporate the lack of enablement present in their respective parent claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0194935 to Clarke et al. in view of U.S. Patent No. 6,405,833 to Baranda et al.

With respect to claim 16, Clarke discloses a system for determining a condition of an elevator tensile support (0022, lines 2-4) comprising a device for measuring an electrical characteristic of at least a portion of a tensile support (0021; lines 1-11) and a controller that determines a current condition of the tensile support (0028, line 1 to 0029, line 3) by relating the measured characteristic to a predetermined data set

indicating a relationship between corresponding apparent characteristic values and conditions of the tensile support, the relationship being based upon load information (0028, lines 1-11)

With respect to claim 20, Clarke discloses that the electrical characteristic is resistance (0028, lines 1-2).

As noted above, the invention of Clarke teaches many of the features of the claimed invention and while the invention of Clarke does teach relating the measured characteristic to a predetermined data set including a relationship between corresponding apparent characteristic values and conditions of the tensile support, wherein the relationship is based upon load information, Clarke does not explicitly indicate that the relationship is also based on sheave contact information.

Baranda teaches a flexible flat rope sheave assembly with separate shoulder and flange surfaces having varying friction properties as well as that the degradation of a tensile support depends on sheave contact information (column 1, lines 44-49).

It would have been obvious to one having ordinary skill in the art to modify the invention of Clarke to explicitly indicate that the relationship is also based on sheave contact information because the invention of Clarke does determine degradation of a tensile support based on a measured resistance and load information and Baranda suggests that the combination would have improved the degradation analysis of Clarke by including a known factor of tensile degradation thereby causing such an improvement in analysis by taking into account a greater number of factors known to affect the degradation determination (column 1, lines 44-49).

8. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0046540 to Robar et al. in view of U.S. Patent No. 6,405,833 to Baranda et al.

With respect to claim 16, Robar discloses a system for determining a condition of an elevator tensile support (0001, lines 1-4) comprising a device for measuring an electrical characteristic of at least a portion of a tensile support (0007, lines 6-9) and a controller that determines a current condition of the tensile support (0047, lines 1-7) by relating the measured characteristic to a predetermined data set indicating a relationship between corresponding apparent characteristic values and conditions of the tensile support, the relationship being based upon load information (0049, lines 1-8).

With respect to claim 20, Robar discloses that the electrical characteristic is resistance (0007, lines 6-9).

As noted above, the invention of Robar teaches many of the features of the claimed invention and while the invention of Robar does teach relating the measured characteristic to a predetermined data set including a relationship between corresponding apparent characteristic values and conditions of the tensile support, wherein the relationship is based upon load information, Robar does not explicitly indicate that the relationship is also based on sheave contact information.

Baranda teaches a flexible flat rope sheave assembly with separate shoulder and flange surfaces having varying friction properties as well as that the degradation of a

tensile support depends on sheave contact information (column 1, lines 44-49).

It would have been obvious to one having ordinary skill in the art to modify the invention of Robar to explicitly indicate that the relationship is also based on sheave contact information because the invention of Robar does determine degradation of a tensile support based on a measured resistance and load information and Baranda suggests that the combination would have improved the degradation analysis of Robar by including a known factor of tensile degradation thereby causing such an improvement in analysis by taking into account a greater number of factors known to affect the degradation determination (column 1, lines 44-49).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

U.S. Patent No. 6,752,029 to Madden et al. teaches a load measurement device.

U.S. Patent No. 6,662,660 to Smith teaches an apparatus for testing aramid fiber elevator cables.

U.S. Patent No. 5,804,964 to Hamelin et al. teaches a wire rope damage index monitoring system.

U.S. Patent No. 6,247,359 to De Angelis teaches an apparatus for identification of need to replace synthetic fiber ropes.

U.S. Patent No. 6,133,731 to Melamud et al. teaches a method and apparatus for the on-line measurement of the strength of metal cables.

U.S. Patent No. 5,821,430 to Kwun et al. teaches a method and apparatus for conducting in-situ nondestructive tensile load measurements in cables and ropes.


JP Patent Application Publication No. 2001-302135 to Kato et al. teaches a discrimination method of deterioration state of a rope and elevator using the same.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2857

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeffrey R. West
Primary Examiner
Art Unit – 2857

September 17, 2007